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Editor's Note

It has been four years since the last volume of *Learning Matters* was published. Since then, Durham Technical Community College has experienced several changes in leadership, including the retirement of Mary Anne Grabarek and the appointment of a new coordinator for the Teaching-Learning Center. I hope that this volume honors Mary Anne's commitment to faculty development and marks a return to regular publication of *Learning Matters*.

One constant throughout the changes in the Teaching-Learning Center is the dedication of Dr. Thomas Gould, Dean, Arts, Sciences, and University Transfer as Editorial Consultant for *Learning Matters*. His help has been invaluable.

I would also like to recognize the extraordinary commitment of the members of the TLC Advisory Committee who have helped make the transition in TLC leadership a seamless one. Many of the current members have served years beyond their original two-year commitment, and I appreciate all of their hard work.

Finally, this issue of *Learning Matters* summarizes the faculty research projects called Communities of Learning, Inquiry, and Practice (CLIP) that took place during the 2008-2009 academic year. Funding for the faculty research was provided by the Lumina Foundation through Durham Tech's participation in Achieving the Dream. While this source of funding has expired, I hope this issue of *Learning Matters* generates interest among future faculty researchers and additional support from college administrators for faculty scholarship.

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Introduction to Communities of Learning, Inquiry and Practice at Durham Tech

Gabby McCutchen

Introduction

Historically, community colleges have placed more emphasis on teaching than on research or other scholarly activities. Community college faculty often teach more classes than their university counterparts, and the evaluation of the effectiveness of community college faculty rarely includes their contributions to scholarly fields. However, in recent years, many scholars have argued for the inclusion of community college faculty voices in the many ongoing dialogues about higher education best practices and discipline-specific research. Likewise, Durham Technical Community College's dedication to lifelong learning supports faculty scholarship.

In their article "The extent and nature of scholarly activities among community college faculty," Townsend and Rosser (2009) identify three reasons community college faculty should participate in scholarly activities: to improve teaching practices, to prepare students for research in advanced academic and professional settings, and to increase their own and their institutions' prestige. Townsend and Rosser also purposefully use the term "scholarship" to differentiate between research and to include research as well as other academic activities. In a separate publication, Prager (2003) takes the position that all academic activity is not scholarship; rather scholarship must be directed at an outside audience in order to be subject to the evaluation of experts in the field as well as to add to an existing knowledge base.

The purpose of this issue of *Learning Matters* is to highlight two faculty research projects and to encourage additional faculty scholarship at Durham Tech. The "publish or perish" mindset is not part of our college culture; therefore, definitions of scholarly activities can be broadened to include the seven categories identified by George Vaughan (1988) and inventoried by James Palmer (1992): conference papers, publications,

instructional materials, research or technical reports, community information materials, fine arts exhibits or performance, technical innovations, and other products. Many Durham Tech faculty participate regularly in these and other scholarly activities. The following articles summarize traditional, experimental research projects with test groups and control groups, and they represent only one type of valuable scholarship that takes place on our campus.

Communities of Learning, Inquiry, and Practice

When I first learned about the faculty research model Communities of Learning, Inquiry, and Practice (CLIP) at the January 2008 Achieving the Dream Strategy Institute, the model seemed easily adaptable to the needs and expertise of Durham Tech faculty. In fact, CLIP was developed by InSites, a non-profit organization dedicated to inquiry-based education, planning, and research. InSites piloted the CLIP process at Bakersfield College (a community college) in California, and the Executive Director of InSites has continued to encourage and facilitate application of the CLIP model at community colleges nationwide. Durham Tech's Teaching-Learning Center was fortunate to be able to bring the Executive Director of InSites to campus in Fall 2008.

According to the very thorough online modules that outline the process of conducting an inquiry using the CLIP model, CLIPs "provide opportunities for community college faculty to collaboratively study issues of importance to them about student learning and success." Faculty researchers choose their own research topics and work collaboratively to investigate some critical question about student learning and success. Some of the additional benefits of participating in a CLIP include improving inquiry and research skills, improving classroom teaching, building relationships with faculty from outside of your teaching discipline, and generating campus-wide support for individual classroom initiatives.

Eight Guiding Principles

The following Eight Guiding Principles inform the CLIP faculty research model and implementation:

1. *Conduct inquiry that enhances student learning and success.* This principle is directly related to Durham Tech's mission "to enrich students' lives and the broader community through teaching, learning, and service" and the college's strategic initiative dedicated to focusing on Learning and Student Success. CLIP, like all of the programs of the Teaching-Learning Center, supports the mission of the college.

2. *Ask questions that matter.* CLIP provides faculty with the opportunity to focus on questions that are of interest to them, as opposed to administration-driven topics. For example, when the first CLIP researchers volunteered to participate, the college was involved in several initiatives related to Achieving the Dream, and some individual faculty felt disengaged from the Achieving the Dream efforts. The CLIP participants selected questions that were relevant to them as classroom teachers. Specifically, the "clicker" CLIP tested the impact of a Classroom Response System (or "clickers") while the writing CLIP measured the impact of career-specific writing assignments on students' attitudes about writing.

3. *Create a safe, hospitable, engaging environment.* The CLIP groups met twice for multi-CLIP meetings and countless times for CLIP-specific meetings. In the multi-CLIP meetings, participants were encouraged to share ideas and ask questions openly. Since this was the first time any of us had ever facilitated or participated in a CLIP, we learned together, and all opinions were valued. Also, the multi-CLIP meetings were organized around specific outcomes and goals that helped support the work of the individual CLIPs.

4. *Encourage and appreciate each person's unique contribution.* The members of the writing CLIP divided up the work of researching best practices, designing the writing assignments, and developing the student surveys based on individual interest and skill-level. Each of the participants contributed to the overall research, but the group members were flexible enough to take on different roles.

5. *Build relationships that rejuvenate learning and practice.* The reflective essays by Lois Ballen, Janice Kerber, and Robbi Muckenfuss that appear later in this issue of *Learning Matters* speak to the ways in which their participation in a CLIP rejuvenated and informed their teaching practices. Beyond the research questions and answers, the faculty researchers applied what they learned from participating in a CLIP to their everyday teaching practices.

6. *Create authentic, open-minded dialogue that brings out diverse perspectives.* Participation in the two Durham Tech CLIP groups was varied. The writing CLIP was a diverse group of English, Developmental Reading, Accounting, and Information Systems faculty; whereas, the "clicker" CLIP was made up of Nursing faculty. Moreover, the faculty participants had varying levels of teaching experience in general and at Durham Tech in particular.

7. *Engage in individual and collective reflection.* As demonstrated by the reflective essays that follow, the faculty researchers used their findings from the CLIP research as well as what they learned from each other to inform their teaching practices. The discussions, implications, and limitations described in the CLIP research reports that follow reveal the collective reflections that each CLIP experienced.

8. *Generate sustained, inquiry-based practice.* Most classroom-based inquiry requires iterations of cycles of research that build on previously learned truths. However, the CLIPs had only one academic year to develop their inquiry questions, plan their research methodologies, analyze their results, and make recommendations based on their newly formed knowledge. That said, the sustainability of the research is demonstrated by the "clicker" CLIP's research that supported the expanded use of "clickers" into additional nursing courses and the purchase of the "clickers" hardware to allow for the expansion. Likewise, the "clicker" CLIP faculty researchers have helped faculty in other Health Technologies programs use the technology and to evaluate its effectiveness.

Future of Faculty Scholarship at Durham Tech

Participants in the first CLIPs at Durham Tech learned important information about student learning and also provided valuable feedback about the CLIP process itself. Specifically, at the end of their research cycles, the faculty researchers reported that the scope of the inquiry contributed to the success of the research. For example, the writing CLIP had planned to measure students' performance on the writing assignments (as determined by their grades) in addition to measuring students' attitudes about career-specific writing. However, they found that there was not sufficient time in the preparation semester to develop such a complicated research design, nor was there time in the implementation semester to quantify and analyze both student performance and student attitude.

Additionally, the pilot CLIPs learned early on that the buy-in of multiple departments was crucial. For example, the "clicker" CLIP participants required a software upgrade on their office and classroom computers. The technology required that the faculty researchers petition their dean for the upgrades and then partner with the Information Technology Services Department to coordinate the work. This step added considerable time to the project timeline (not to mention some stress added to the faculty participants).

A third lesson from the pilot CLIPs is that staff and student voices could be valuable additions to the research projects. Both CLIPs surveyed students and captured their attitudes about specific aspects of classroom learning, but students might have contributed positively to the research design. As CLIP becomes integrated into the culture at other community colleges, for example, Seattle Central Community College, the definition of "faculty researcher" is being expanded to "practitioner researcher," and students and staff are being included at every stage of the process.

Finally, CLIP is only one of many faculty research models. While it was successful in its pilot year at Durham Tech, we might adapt the steps in the process to better fit our goals as a college or we might adopt principles from other faculty research models; for example, the Scholarship of Teaching and Learning is a similarly reflective process of inquiry that is applied extensively in University of North Carolina institutions.

Whatever direction we choose to pursue, I hope this issue of *Learning Matters* marks the beginning of increased support for and celebration of faculty scholarship at Durham Tech.

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"Clickers" in the Nursing Classroom

Helen Ayres, Lois Ballen, and Lesley Chaffin

Purpose

The purpose of this project was to evaluate the use of a classroom response system, or "clickers," in a second year nursing course. Our Community of Learning, Inquiry, and Participation (CLIP) collected student and faculty perceptions of this technology related to ease of use, and student attention, active participation, and understanding of course content. Faculty also evaluated the effect of "clicker use" on time available for course content and class preparation time. Grades in the course were also compared between two sections. One section of each course used the "clickers," and one section of each course used class discussion.

Introduction

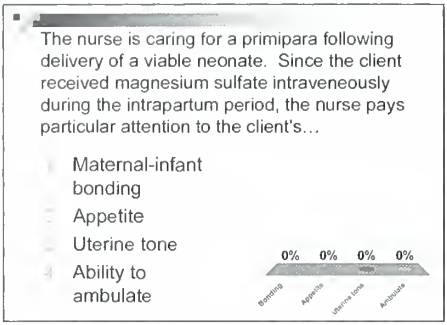
A Classroom Response System, also known as "clickers," is a software (Turning Point, interactive PowerPoint software) and wireless hardware (Response Card keypads and receiver) system that allows presenters and instructors to present questions and allows participants to submit a response by using a Response Card keypad.

When the instructor presents an interactive polling slide via a PowerPoint presentation, the participant presses the number on the Response Card that corresponds to the answer of his or her choice. The Response Card immediately sends a radio signal to the wireless receiver attached to the computer running the PowerPoint presentation. Turning Point software running with PowerPoint records and/or displays the response per the presenter's preference.

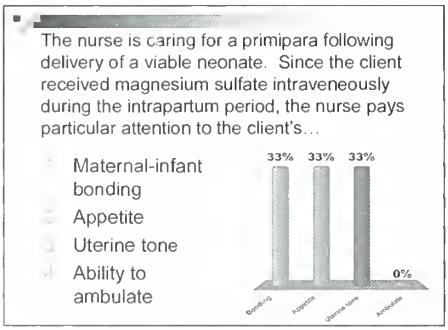
Both the computer used to create the slides and the computer used in the classroom must have the Turning Point software. The Turning Point software can be downloaded free from their Web site, www.turningpointtechnologies.com. Because of firewalls at Durham Tech, the Information Technology Services Department needs to download software onto Durham Tech computers. Computers used must have at least Windows 2000 and Microsoft Office 2003. Before we were

able to proceed with our project, it was necessary to get faculty office and classroom software upgraded since not all computers we would be using had at least these versions of software.

The following is an example of a Turning Point slide. When in slide show view, the 0% indicators do not show. When the timer is activated, students can use their Response Card to answer the question anonymously. Faculty can choose to set the timer for varying amounts of time.



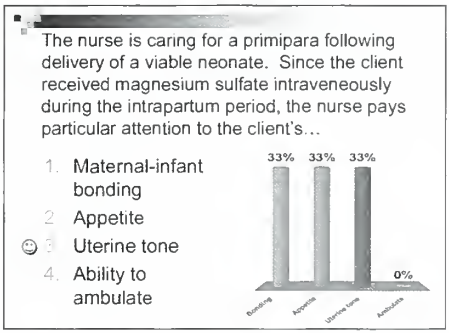
When the timer has finished, the slide show will indicate the percentage of respondents that chose each answer.



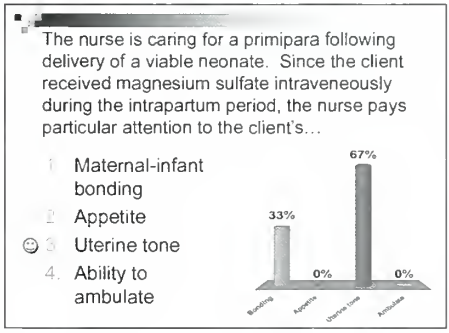
This gives immediate feedback to faculty on student understanding. Research has suggested that there is a disconnection between what faculty members think is so clearly communicated and what students understand (Fies, 2005). As the above slide indicates, the majority (67%) of students did not answer the question correctly. At this point, a faculty

member can either choose to ask individual students to discuss the reason(s) for each answer or have students discuss the concepts with each other and then the faculty member can clarify any remaining points that are unclear.

The faculty member can then indicate the correct answer as the next slide demonstrates.



Or the faculty member can ask students to discuss the various answers chosen and then repeat the slide and have students answer a second time to determine if understanding has increased.



Background

The use of Classroom Response Systems, or "clickers," has been evaluated in multiple higher education disciplines. The most commonly cited perceptions of the effects of "clicker" use are: (1) the creation of a more positive, enjoyable, and active atmosphere in the classroom, (2) immediate

faculty and student assessment of student understanding, (3) increased group interaction, (4) accommodation of multiple learning styles, and (5) for grading and attendance purposes (Caldwell et al., 2007; Fies & Marshall, 2005; Graham et al., 2007; Kaleta & Joosten, 2007; and Roschelle & Abrahamson, 2004). Several authors have reported that student performance on exams is improved; others have described no significant improvement in student performance (Caldwell et al., 2007; Graham et al., 2007).

The nursing literature contains few articles on the use of a classroom response system. Several of these references introduce the technology and describe how to use it without reporting on any research using the technology. Debourge (2007) evaluated students' perceptions of the use of "clickers" in a nursing classroom and concluded "that classroom response systems provide faculty with options to enhance interaction during the learning process and provide both students and faculty immediate real-time feedback reflecting students' understanding of course content. Integrated with a purposeful instructional design, the use of clickers increases the level of student participation, promotes engagement of students in active learning, supports innovative instruction that results in high level application and synthesis of complex concepts, and supports skill development for advanced reasoning" (p. 87).

The many purposes of "clickers" can be broken down into *empowering* uses, such as for formative feedback and *compelling* uses such as grading and attendance. When the various uses of "clickers" were analyzed separately, Graham et al. (2007) concluded that students view as helpful strategies that empower them to participate in the learning but do not coerce or force them to participate. Additional negative student feelings related to clicker use were technical problems and the cost of the device. Vernon Bridges, Chair/Instructor, Developmental Math, graciously lent us the "clickers" we used for our project. Therefore, there was no additional cost to either the college or the students. We did encounter a few technical problems.

Faculty has identified several negative aspects of "clicker" use. Integration of clickers can require a greater amount of time than many instructors

had anticipated, and faculty identified a rather steep learning curve in adapting the "clicker" technology (Kaleta & Joosten, 2007. The use of "clickers" to stimulate discussion has also been identified as decreasing time for content coverage (Caldwell et al. 2007).

Methods

The same faculty taught both sections of NUR 210A and NUR 210B. Sections 001 of both courses were taught during the first eight weeks of the Fall 2008 semester, and sections 002 of both courses were taught during the second eight weeks of the same semester. Teaching techniques for NUR 210 A and NUR 210B were the same for both sections with the exception of introducing the use of "clickers" in sections 002. These techniques included lectures using PowerPoint presentations and games, such as crossword puzzles, word scramble, word search, and jeopardy. Students were also asked questions during the lecture in attempt to get them involved as well as to see if they understood the information. Practice NCLEX-like question sessions for both NUR 210A-001 and NUR 210B were held prior to the first test. Additional practice questions were available for both sections and students were encouraged to work on these. Group testing was done with all tests except the final, specifically, after students individually take a test and hand in their answer sheet, the students form groups of four to six and take the test as a group. This allows for discussion of content and test-taking strategies.

The same teaching techniques used above were also used in the second eight weeks. However, the NCLEX-like questions related to class content were asked with students responding using the "clickers." Once the results were recorded in Turning Point, each chosen answer was then discussed as to why it was right or wrong.

Results

Student Survey Results

Students were asked to complete a five point Likert-like scale with eight items. This survey also contained three open-ended questions (Appendix A). All forty-two students who completed the courses filled in the questionnaire. The majority of students agreed or strongly agreed with the following seven items (the averages of the students' responses appear in

parentheses). Two students indicated that they strongly disagreed with these statements. However, these students wrote positive comments about clicker use. It is not known if these two students misinterpreted the use of the scale or did strongly disagree with the statements. Their original responses were included in calculating the averages for each item.

1. The use of clickers increased my attention and interest in class (4.43).
2. The use of clickers helped me to identify what I did not understand (4.27).
3. The use of clickers improved my understanding of the course content (4.25).
4. The use of clickers increased my understanding of test-taking strategies (4.27).
5. The use of clickers increased my ability to be a more active participant in this course (4.39).
6. I enjoyed the use of clickers in this course (4.57).
7. Given two class sections that are the same in all other respects, I would prefer the section that uses clickers (4.63).

Students' responses to the following item varied from disagree to strongly agree. The average of all student responses for this item was between undecided and agree (3.82).

1. The use of clickers helped me to do better on exams.

Students were asked what they liked about using "clickers." Responses included a chance for everyone to participate, fun, enjoyed the interaction, reinforced the material, made class more interesting, kept me more alert in class, and immediate feedback. Appendix B contains the student responses.

There were very few answers to the question "What didn't you like about using 'clickers'?" A few students identified that learning how to use the "clickers" the first day and occasional technical problems as negative aspects. Suggestions for improving the use of "clickers" usually referred to including more questions and making questions more difficult.

Faculty Survey Results

The three faculty completed a similar five point Likert-like scale with eight items. This survey also contained three open-ended questions (Appendix A). Faculty agreed or strongly agreed on the following six items.

1. Clickers and accompanying software were easy to use (4.33).
2. The use of clickers enhanced the attention of students (5.00).
3. The use of clickers enabled me to determine students' understanding of course material (5.00).
4. The use if clickers allowed students to be more active participants in class (4.67).
5. The use of clickers improved the overall quality of my lecture (4.67).
6. I would prefer to give my lectures using clickers (5.00).

The main negative aspects identified in the literature for faculty in using "clickers" are related to a decrease in time for covering content and the additional prep time involved. Our faculty disagreed that "clicker" use decreased time for covering content and were undecided about "clicker" use requiring a great deal of additional preparation time. Since it was the first time any of the faculty used the "clickers," there was definitely a learning curve.

1. Because of clicker use, there was less time for covering content (2.33).
2. Integration of "clickers" into class required a great deal of additional class preparation time (3.33).

Faculty reported that students were more awake and alert with the use of "clickers." The active participation of all students, a fun tone in class, and the ability to assess student understanding were among the advantages identified by faculty. Faculty reported the "clicker" use did require more preparation time and there was an upfront learning curve. The benefits perceived from use of "clickers" in the classroom were worth the additional time investment.

Statistical tests

Is there a difference in overall GPA for NUR courses for students in NUR 210A versus NUR 210B?

In order to compare course averages for sections 001 and sections 002, it was first necessary to determine if the groups were equal. In order to do this, each student's GPA for all nursing courses taken in the program was calculated. Only students who had taken both NUR 210A and NUR 210B during the fall semester were included in the sample. There were twenty-two students in group A (students who took NUR 210A first). Their average GPA was 85.8 with a standard deviation of 3.16. Group B (those students that took NUR 210B first) contained 20 students with an average GPA of 84.3 and a standard deviation of 3.15. A 2-sample t-test of equality of means was performed. The resulting p-value of .11741 (11.741%) indicated that we could not reject the null hypothesis that the means were equal. The difference in the average GPA for both groups was not statistically significant.

Is there a difference in course grades for students in NUR 210A-001 versus NUR 210A-002 (different students)?

Twenty-two students took NUR 210A-001. Their average course grade was 84.43 with a standard deviation of 3.20. Twenty students took NUR 210A-002. Their average course grade was 86.20 with a standard deviation of 3.31. The difference in average grades of the two groups was 1.77 points. Using a 2-sample t-test, the p-value is .0865 (8.65%). Using a significance level of 5%, we did not reject the null hypothesis that the mean course grades of students taught using method 1 was the same as the mean course grade using method 2. There was insufficient evidence to support the claim that student course grades are different.

Is there a difference in course grades for students in NUR 210B 001 versus NUR 210B-002 (different students)?

Twenty students took NUR 210B-001. Their average course grade was 83.15 with a standard deviation of 3.77. Twenty-two students took NUR 210B-002. Their average course grade was 85.71 with a standard

deviation of 3.50. The difference in average grades of the two groups was 2.56 points. Using a 2-sample t-test, the p-value is .0286 (2.86%). Using a significance level of 5%, we rejected the null hypothesis that the mean course grade of students taught using method 1 was the same as the mean course grade of students taught using method 2. There was sufficient evidence to support the claim that student course grades are different. There is a significant difference in the average course grades of the two groups. The group in section NUR 210B-002 scored higher.

Is there a difference in course grades for students in NUR 210A-001 and NUR 210B-002 (same students)?

To carry out this test, each student's course scores were recorded and the difference (grade in 210B – grade in 210A) calculated. These differences were then averaged. For twenty-two students, the average difference in course grade was 1.28, with a standard deviation of 3.64. Using a t-test, the p-value is .1134 (11.34%). Using a significance level of 5%, we did not reject the null hypothesis that the mean of the differences of the course grades in NUR 210A-001 and NUR 210B-002 was zero. The difference in scores was not statistically significant. The students did not perform in a significantly different way in the two courses.

Is there a difference in course grades for students in NUR 210B-001 and NUR 210A-002 (same students)?

To carry out this test, each student's course scores were recorded and the difference (grade in 210B – grade in 210A) calculated. These differences were then averaged. For twenty students, the average difference in course grade was 3.05 with a standard deviation of 2.97. Using a t-test, the p-value is .0002 (.02%). Using a significance level of 5%, we rejected the null hypothesis that the mean of the differences of the course grades in NUR 210B-001 and NUR 210A-002 was zero. The difference in scores was statistically significant. There was a statistically significant difference in the course grades of students who began in NUR 210B-001 and finished in NUR 210A-002. Their grades in 210B were lower; that is, they scored higher in the course they completed second.

Discussion

Both students and faculty reported many benefits from the use of "clickers" in the classroom. The perceived increase in student attention, interest, enjoyment, and participation in class can provide increased opportunities for student learning. Faculty currently utilize many strategies to encourage student participation in class. Asking students questions in class either by asking students to supply an answer or by doing practice NCLEX-like questions does elicit answers from a portion of the students. When classes have limited opportunities for students to respond, participation can be unbalanced with the majority of responses coming from the students most willing to respond in front of their peers and the more knowledgeable students (Graham et al., 2007).

Other techniques that have been used to facilitate class participation when the instructor asks questions are having students raise their hands or use different colored paper to indicate their answers. While this does give the instructor a general idea of how many students chose each answer, it is difficult to accurately tabulate and determine how many students answered incorrectly and which answers they chose. None of these methods are anonymous and do not encourage the participation of reluctant participators. As part of his doctoral dissertation, Fies (2005) used videotapes to compare classes in which students responded to questions by raising hands to classes using a "clicker" system. His analyses of the videotapes agree with students' self-reported perceptions and suggest improved participation in the classes using an anonymous Classroom Response System ("clickers").

Two groups of students that have been identified in the literature as reluctant participators are females and students from other cultures. The vast majority of students in nursing classes are in one or both of these groups. Fies (2005) cites both Benckert's (2001) and Tannen's (2004) claims that female learners are particularly vulnerable to low participation because of the worry that they might appear to dominate the discussion. In addition, Fies (2005) cites Beek (2006), who suggested that students from other cultures are often not used to responding instantaneously and are fearful of losing face by answering incorrectly (Graham et al., 2007).

Students' comments on the survey such as "I got the chance to participate" and "I liked it because everyone was able to answer the question without someone yelling out the answer first" suggest that there are reluctant participators in class who benefit from the use of this system.

Identification of and increase in student understanding of course material is a main objective of "clicker" use in the classroom. Both faculty and students perceived this technology as helpful in meeting these objectives. The use of "clickers" did identify times in which it was necessary to re-teach material. It is not possible to know whether it is solely the use of "clickers" or the perceived increase student attention, interest, enjoyment, and participation in class that the "clickers" encourage that is responsible for this perception. Faculty do strive to make class fun, meet the needs of students with diverse learning styles, and encourage active participation in class; this technology does facilitate these efforts. One student commented, "I am a visual learner — the clickers helped me to view material and read each question."

Careful selection of questions can also identify for students the instructor's view of critical content and priorities and encourage higher level thinking skills. Expectations for participation and performance can also be communicated while capitalizing on the positive effects of collaborative, cooperative learning. De Bourge (2007, p. 80) cites Chickering and Gamson's (1987) seven principles for good practice in undergraduate education as (1) encourage contact between students and faculty; (2) develop reciprocity and cooperation among students; (3) encourage active learning; (4) give prompt feedback; (5) emphasize time on task; (6) communicate high expectations; and (7) respect diverse talents and ways of learning. "Clicker" technology can be a valuable tool in enabling instructors to implement these principles in the classroom. While the results of our study suggested a significant improvement in grades in some instances but not in others, the many other advantages of this system make it a valuable technology to facilitate learning. Results of other studies in the literature on the effect of the use of "clickers" in the classroom on grades have also been mixed.

Negative aspects of the "clickers" were minimal. We elected to use the empowering or participative features of this technology and not the compelling features such as grading and attendance. Only once during the eight weeks of use did one instructor report technical problems with the system. There was no expense to either students or to the school. We were able to borrow the Response Cards and receivers.

Faculty did report a learning curve and did identify that extra time was needed to prepare for class. However, they perceived the benefits of the technology as far outweighing the extra time it took to learn and use the system. It is possible that the use of "clickers" can decrease time available for content. Continued identification of critical concepts may assist faculty in planning for better use of class time.

Conclusion

Students and faculty had positive attitudes toward "clicker" use in the classroom. Students indicated that they would prefer to take a section of class that uses the "clickers." Faculty indicated that they would prefer to use this technology in other classes. Due to the small number of students in the study, it is not possible to generalize the findings related to the increase in some class averages. Results of this study support those identified in the literature. The creation of a more positive, interactive, and fun classroom along with timely identification of student understanding suggest that "clickers" can be a valuable tool for both faculty and students.

Use of Results

As a result of the findings of the study, the Associate Degree Nursing (ADN) program purchased response cards and receivers. Faculty involved in the CLIP presented "how to use" sessions to the rest of the ADN faculty during the Spring 2009 semester. "Clicker" use has been incorporated into all ADN courses. During the Fall 2009 semester, the Practical Nursing program began to also use them. The Occupational Therapy program is planning on piloting them during the Spring 2010 semester. We continue to have positive feedback from faculty and students.

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Appendix A

"Clicker" Survey (Students)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Question	1	2	3	4	5
The use of "clickers" increased my attention and interest in class.					
The use of "clickers" helped me to identify what I did not understand.					
The use of "clickers" improved my understanding of the course content.					
The use of "clickers" increased my understanding of test-taking strategies.					
The use of "clickers" increased my ability to be a more active participant in this course.					
The use of "clickers" helped me to do better on exams.					
I enjoyed the use of "clickers" in this course.					
Given two class sections that are the same in all other respects, I would prefer the section that uses "clickers."					

What did you like about using "clickers?"

What didn't you like about using "clickers?"

What suggestions do you have for improving the use of "clickers" in the classroom?

"Clicker Survey" (Faculty)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Question	1	2	3	4	5
"clickers" ond occomponying softwore were eosy to use.					
The use of "clickers" enhonced the ottention of students.					
The use of "clickers" enobled me to determine students' understonding of course moteriol.					
The use of "clickers" ollowed students to be more octive porticiponts in closs.					
The use of "clickers" improved the overoll quolity of my lecture.					
I would prefer to give my lectures using "clickers."					
Becouse of "clickers" use, there wos less time for covering content					
Integrotion of "clickers" into closs required o greot deol of odditionol closs preporotion time.					

What did you like about using "clickers?"

What didn't you like about using "clickers?"

What suggestions do you have for improving the use of "clickers" in the classroom?

Appendix B

Student Responses to "Clicker" Survey

What did you like about using "clickers?"

- Fun, interesting, reinforced the lecture
- Gave me an idea of what to expect, especially priorities
- Made the topic covered more interesting
- Positive reinforcement to learning, quicker than normal, also allows people to participate in class when they normally wouldn't
- Helps to reinforce info learned, helps to contain info learned
- Improves thinking during lectures
- Questions were about subject matter
- I really liked the interaction and it was fun
- Reviewing questions and going over them helped tremendously
- Kept me more alert in class. They were challenging and showed me what I knew and didn't know
- Keeps me involved in the class
- Interaction and doing practice questions
- Interactive learning
- I can see the class average on the answers
- Being able to answer questions and learn
- I liked it because everyone was able to answer the question without someone yelling out the answer first
- I'm a visual learner so therefore, the clicker helped me to view material and read each question
- Sample test questions and the immediate feedback
- Knowing the class was doing well understanding current teachings
- I liked the interaction
- Seeing new material in a test form
- Made class more interesting and gave me a better idea of topics to focus on

- Different way of engaging material
- I got the chance to participate
- Technology progress
- The test questions - the more difficult the better. It made me review my notes at a crucial time of learning if I did not know the answer.
- It helped reinforce the material
- They allowed for hands on participation in class and kept the class active instead of just listening to a lecture
- Allowed us to get an idea of the style of questions asked on an exam and to reinforce what we learned
- They allowed the class to participate actively and see if we were retaining all of the information and the instructor to elaborate on information provided thus far
- It increased my attention span
- I could change my answer prior to the time running out if I needed
- It makes us feel like we are participants and always caused a good discussion when we disagree. I think they added a much needed element of active involvement in class
- Seeing the questions

What didn't you like about using "clickers?"

- Nothing
- NA
- Can't see the screen from my seat
- Not enough questions
- Sometimes didn't work
- Questions were not as difficult as test questions
- The buttons were small but overall adequate
- When the computer would mess it up
- Nothing
- Nothing, liked all around
- I really enjoyed them
- Nothing

- That they don't work in all classrooms
- Nothing
- Too much time to answer
- None
- Blue color is pretty
- The first day understanding how it worked
- I love the clickers
- Sometimes it did not work or the signal was not connecting
- Some people would obsess about not being able to register answers and that would cause a disturbance
- What suggestions do you have for improving the use of "clickers" in the classroom?
- More challenging questions, more questions
- Save for end of lecture
- Definitely continue to use the clickers when presenting material to enhance learning experience
- Allow more time for answers and add more questions
- Get more questions
- More questions
- When the answer comes up, the pie chart graph is not good because it's hard to see the answers. The other methods of displaying the answers are fine
- More questions
- Do more questions, it really helped me with the test
- Make the graphs more readable, no circle graphs
- Can't think of any
- Individual tracking of student answers
- I can't think of any ways to improve them
- Add more questions to lecture
- 30 seconds for the question timer. More difficult questions as would be on the NCLEX
- Having more questions
- Include more questions and use of the clickers

- The only positive suggestion is that more questions are offered if possible and the end of that section teaching at least 5 questions before moving on
- Provide more questions
- Periodic maintenance and check ups to make sure all working and installation in more rooms

Faculty Responses to "Clicker" Survey

What did you like about using "clickers?"

- Getting the students involved and being able to know if they were understanding the content.
- Immediate feedback from students on their understanding
- Active participation of students
- Students were more engaged – awake and alert
- I had the ability to quickly assess student understanding of material without putting anyone of the spot
- Setting a fun tone in class instead of the dry, data laden slides, the questions added color and interest which affected the classroom mood
- All students participated instead of the usual few students who answer questions

What didn't you like about using "clickers?"

- Nothing really although it did require more time and work, I feel that it was worth it.
- Up front learning curve
- Getting faculty and classroom hardware upgraded
- Time needed to add questions to all the power points thought it was worth the investment.

What suggestions do you have for improving the use of "clickers" in the classroom?

- Find the money so we can continue using them

Conducting Research in the Classroom: Experiential Musings

Lois Ballen

In my field of study, obstetrical nursing, there is sometimes a discrepancy between how care is delivered and what research demonstrates is most likely to result in positive outcomes for mothers and babies. Though the buzz word is currently "evidence-based," some of the care that is provided is actually custom-based rather than evidence-based. This has been a great frustration to me as an instructor. How do I teach what is truly documented to be best practice when the students see a different form of care actually practiced in their clinical rotations? It is tempting to practice the way one sees it done.

I would suggest that it is also challenging for faculty to accept that their tried and true methods of teaching may not be the most effective, even when given evidence to the contrary. Many faculty were themselves taught by the lecture method. The teaching literature is currently showing the value of active learning, yet many of us faculty have difficulty taking in the new information and changing our teaching style. As experienced teachers, we resist applying evidence that contradicts our usual practice.

Given my curiosity about research and how to implement the findings into practice, it fit right into my interests to be asked by the Associate Degree Nursing Program Director, Dr. Helen Ayres, to participate in a study about teaching strategies in the classroom. When she made the suggestion that Leslie Chaffin and I participate in a Community of Learning, Inquiry, and Practice project, I had not heard of CLIPs and was not familiar with "clickers." Dr. Ayres had already thought through some of the study aspects and had developed a study design that easily fit into our already existing classroom. Our task was to teach a group of students for eight weeks. For the second eight weeks, we would teach the same course using the "clickers." The study question looked at the impact of "clicker" use on student grades and on the students and faculty subjective experience of using "clickers" in the classroom.

Participating was particularly appealing to me because we would function as a team, supporting each other in learning how to use the "clickers" and thinking as a group about the process. In addition, we could possibly add to the body of literature about whether a particular strategy is effective in teaching nursing. I was also quite interested in the possibility of co-publishing an article about our experience, as a way to contribute to the nursing education literature, which has been a long-term goal for me.

One of the barriers to doing the study was learning a new piece of technology. Dr Ayres arranged for a demonstration by a representative from the company who makes "clickers." Using the "clickers" involved not only learning to use them in the classroom, but taking considerable time to add questions to PowerPoint presentations so the "clickers" could be used.

The "clicker" is a small hand-held device that the students use to select, or "click," their answers to a question on a PowerPoint presentation. The instructor has placed an electronic device, shaped like a memory stick, into the CPU. This device picks up the students' answers and displays them on the PowerPoint slide, showing the percentage of answers that were selected by the students for each answer. It is clearly evident if the class as a whole understands the concept or not. The answers are displayed in aggregate, not by individual student choice. In other words, the selection made by each student is anonymous, and it is readily apparent if one or two, half, or most students do not know the correct answer. In preparation, the instructor has previously written the questions and answers and placed them into the PowerPoint presentation using a program that is downloaded at no cost. This preparation is the time consuming aspect, as entering the questions into the PowerPoint presentation involves several tedious steps.

In doing the research, I had two unexpected experiences. I am quite familiar with reading the part of studies that addresses bias – making sure that the two groups of the study are similar except for the one variable that is being studied. However, this study could not be blinded. It

was obvious which group used the "clickers." Our task was to teach the first group of students in our usual way and to teach the next group in the same way with the addition of the "clickers" in the classroom. It was challenging to make the "clicker" group classroom experience the same in every way. It made me aware of how much my style changes from semester to semester, as I adapt what I have learned about what previously worked or did not work well in the classroom. I also recognized my desire to "help" things go well in the classroom so that the "clicker" section would be successful. This aspect in particular surprised me. We have all read about researchers who falsify the data to make it appear that their study proved the outcome they desire. I found myself wanting the study group to do better, even while knowing that my bias can impact the results of the study.

The other unexpected result of the process was learning how much I enjoy using the "clickers" in the classroom. Learning new technology does not come easily to me, and I often resist learning it until it is truly necessary. Even though lecturing for three hours twice a week while also keeping the students alert is a challenge, I still find the lecture method to be the most familiar and thus most comfortable teaching style.

I have discovered several benefits to me as an instructor in using the "clickers." First, all students participate, not just those who are extroverts or paying attention. Using the clicker is safe for the shy student who would otherwise sit back letting others answer out loud. When students participate actively in class, they are intellectually engaged with the material. It is too easy for the shy student to become disengaged or mentally lazy. With the "clicker" question, all of the students need to think about the material being presented so they can "click" and answer. Second, students love technology and action. The clicker slides display color, motion, a timer, and multiple display options. The clickers are one more way to keep students engaged and interested. Third, a knowledge-based question that is placed right after a complex topic demonstrates quickly if the students understood the concept and allows for immediate clarification of the material. Fourth, application questions demonstrate if students are able to relate the concepts to clinical situations and show

them how the information will be used in real-life circumstances. Finally, a group of questions at the end of a topic can be used to summarize the main concepts using an active learning method.

Participating in this research project has been both challenging and stimulating. As teachers, we continually review our material and method of preparation. My experience brings up the issue of how we evolve as teachers. Do we become complacent in our role as "expert" or do we make an effort to both see and implement things in different ways? In the field of science, the levels of evidence used in decision-making have been prioritized based on the level of quality of the information (Barton et al., 2007). If our goal is to treat patients with the best available care, using what is most recognized as our highest level of understanding, then we need a method of determining which information we will accept as the highest level of current knowledge. Basing patient care decisions on the opinion of those we respect or on our personal clinical experience is considered the lowest level of evidence. Similarly, as we evaluate our teaching process, are we using the highest level of quality of information to guide our practice, or do we fall back on custom?

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Introducing Writing Assignments in Career and Technical Courses: A Study of Student Attitudes toward Writing

Theresa A. Fine-Pawsey, Janice Kerber, Janel Mays, Robbi Muckenfuss, and Tom Murphy

Background

When assessing written assignments in career specific courses, the quality of students' writing is an indication that students place little emphasis on the writing task. As instructors, we often hear from students that writing is "what happens in English class." We know that writing is not only a skill for English classes, but is also a skill that future employers need and expect from their employees. Durham Technical Community College, as part of its strategic goals, recognizes the importance of "Ensuring… [all] graduates acquire the knowledge and master the skills necessary for future academic, technical, and career success." Our Community of Learning, Inquiry, and Practice (CLIP) has chosen to focus on the skill that meets all of those criteria: effective written communication.

Considering humanities and social science courses traditionally include a variety of writing assignments, we focused on increasing the incorporation of writing activities into career and technical program courses, specifically into CIS 110: Introduction to Computers, a course that many students seeking a variety of Associate in Applied Science (AAS) degrees are required to complete in the beginning of their programs. The guidelines for Durham Tech's degree programs explain graduates will need to exhibit the "fundamental and necessary skills" of effective written and oral communication, but we wondered if the students were aware of what this means to their specific career goals.

Frequently, writing assignments given in career specific courses are simply "reports" designed to give students the opportunity to practice their writing skills but are unrelated to the types of written communication that they will eventually need in their chosen careers. Our initial research questions sought to discover the types of writing assignments that are

most relevant to career and technical programs and how the integration of a career-specific writing assignments impact students' understanding of the importance of written communication in their future careers. We designed a series of short course-related homework assignments and a pre- and post- survey to assess students' attitudes about written communication.

Using the results of the surveys and the graded assignments, we hoped to discover the students' initial levels of awareness regarding effective written communication and how the incorporation of more career-specific writings might help to increase this understanding if necessary.

Review of the Literature

Writing in Technical Programs

The writing classroom, while a strong foundation for writing instruction, is not the only context in which students can encounter writing or where positive attitudes toward writing can be modeled. While writing courses provide students with the tools and techniques required to communicate clearly and appropriately in different contexts and scenarios and "writing across the curriculum should begin in the writing classroom" (Tichenor, 2000, p. 5), writing instructors are aware that "hearing... from someone other than an English teacher also makes more of an impression" (Tichenor, 1995, p. 3). When introducing writing in a non-writing course, instructors must ensure that writing skills taught correspond to the same general writing skills students learn in writing courses and that such correspondence is clearly communicated, as "students do not know or realize that these skills are applicable outside a specific unit" (Hutton & Pluske, 2006).

Establishing Relevance

Developing relevant writing assignments first necessitates an understanding of what is relevant to students. Tichenor (1995) claims that students must be aware of "the types of writing they will be required to do in their degree programs as well as on the job" and "what kind of writing they will be expected to do as they move up through the ranks of a company or business" (3), acknowledging that, for the technical student,

workplace writing is more tangible than academic writing. McPherson (1998) also asserts that "Teachers can… stimulate students' enthusiasm if they can relate topics taught in school to career of life goals of students" (68).

While narrowing the scope of relevance to workplace writing is useful, the category is far too broad. In "Technical Writing for Construction Science Graduates," Choudhury, Rocha, and Burt (2003) establish, through a survey of construction industry executives and construction program faculty, a list of four essential writing skills, three of which are applicable to most any industry, "business letters, requests for information, [and] e-mail"; and only one of which is industry specific, "schedules of values" (186). Forms of communication, such as e-mail, meet the needs of a variety of careers, therefore providing the most relevance to the most number of students. Additionally, a study of the value of business report writing finds that "writing the business report improved the ability to organize when writing" (Hiemstra, 2001, p. 46). Nicoletti and Keenaghan (2002) found that more reflective, exploratory writing assignments, such as education and career exploration, and reviewing professional articles, were "valuable tool[s] for promoting good writing skills in a technology-intensive program of study."

Methodology

This study was conducted in a large, diverse, urban community college. The context of this study was a semester-long computer literacy course, CIS 110: Introduction to Computers. The course covers computer concepts and hands-on skills involving the Microsoft Windows operating system, Internet Explorer, Word, Excel, Access, and PowerPoint applications.

The subjects involved were a convenient sample from four sections of the course: two day sections taught by the same instructor and two evening sections team-taught by two instructors, in which the lecture instructor covered computer concepts and the lab instructor covered hands-on computer skills. In each pair of sections, one section was taught the relevant material in a conventional manner (control group),

while the other section was taught the same material with the addition of writing assignments (test group).

The writing assignments given to the test group were memos, proposals, presentations, and technical documentation based on suggestions from the National Workforce Center for Emerging Technologies and other research. Writing assignments were related to the material covered in class and were given approximately every two weeks.

Surveys were administered at the start of the course and at the end of the course to both the control and test groups. Survey questions gathered measurements of students' attitudes toward the relevance and importance of written communication as well as demographic data. The post-survey included additional questions relating to the students' impressions of the assignments.

At the conclusion of the course, the test group's post-survey responses were compared to their pre-survey responses to determine if students' attitudes toward the relevance and importance of written communication had changed and if there were any differences amongst student sub-populations (gender, major, experience).

Sample

When students took the pre-survey, they were asked several demographic questions. Based on these questions, we know the following about our sample. The group was made up of a total of 66 students with 56% being female and 44% being male. All but one student identified themselves according to race. The majority of the students self-identified as either Caucasian (43%) or African-American (35%). Students also reported their age (see table 1). Lastly, students reported their current programs of study. These ranged from University Transfer programs to Health Technology programs and Business and Public Service programs (see table 2).

Table 1: Age of Students

Under 18	2	3%
18 – 22	25	40%
23 – 29	16	25%
30 – 39	8	13%
40 – 49	7	11%
50 – 64	5	8%
65 and aver	0	0%

Table 2: Programs of Study

Business and Public Service Programs	13	20%
Health Technalagy Programs	15	23%
Industrial and Engineering Programs	3	5%
Information System Programs	14	21%
Arts, Sciences, and University Transfer Programs	17	26%
Undecided	4	6%

Results

The most significant question the CLIP hoped to answer is whether students' attitudes toward the importance of written communication changed following writing assignments given during the semester. To answer this question, we compared responses to three key questions:

1. I need to use written communication *effectively in my everyday life.*
2. I will need to use written communication *effectively in my future career.*
3. I will need to use written communication *on a daily basis in my future career.*

The test group had a sample size of thirty six (n=36), and the control group had a sample size of fifteen (n=15). The percentage of students who agreed to these questions for the treatment and control groups are contained in Tables 3, 4 and 5.

Table 3: "I need to use written communication effectively in my everyday life."

Group	Semester Start/End	N	# who agreed	%	Test stat	p-value
Test	Start	36	30	83.3	0.681554	0.495521
	End	36	32	88.9		
Control	Start	15	12	80	0.221565	0.824653
	End	12	10	83.3		

Table 4: "I need to use written communication effectively in my future career."

Group	Semester Start/End	N	# who agreed	%	Test stat	p-value
Test	Start	36	31	86.1	0.75	0.453255
	End	36	33	91.7		
Control	Start	15	13	86.7	-0.77548	0.438058
	End	12	9	75		

Table 5: "I need to use written communication on a daily basis in my future career."

Group	Semester Start/End	N	# who agreed	%	Test stat	p-value
Test	Start	36	31	86.1	-0.32757	0.743236
	End	36	30	83.3		
Control	Start	15	13	86.7	-0.77548	0.438058
	End	12	9	75		

At the start of the semester, approximately 80% of students in both the control and test groups agreed that they need to use written communication effectively in their everyday lives (Table 3). At the end of the semester, this figure had increased slightly but not significantly. Neither increase was statistically significant according to p-value analysis, mean-

ing that the increases are likely due to random chance. (The p-value can be understood as the likelihood that the groups being compared do not have significantly different response rates. Generally, we conclude that the difference in percentages is significantly different only if the p-value is less than 0.05.) Around 86% of students in both groups agreed to questions 2 and 3, again revealing a high rate of awareness (Tables 4 and 5).

The post-survey results were initially surprising because the control group's agreement decreased, but p-value analysis shows that this change was not statistically significant. Student attrition also resulted in changing of the sample size for the post-survey. As Chris Mansfield, Instructor, Mathematics and Statistical Consultant for the project, observed, "it should be noted that the percentage of students in each group (control and test) was quite high to begin with, making any significant increase unlikely. In other words, it seems that most students already understand the importance of effective written communication." Mansfield also noted, "the results don't support the idea that the writing assignments had an impact on the students' opinions."

Project Limitations

The limitations of any research are those elements that are beyond the control of the researchers. While we were able to control for specific course sections and instructors, some unforeseen incidences did occur. Specifically, because we, the researchers, were not teaching the sections involved, we faced challenges in ensuring that the instructors of the control sections clearly understood the assignments provided to them, that they coordinated with each other regarding scheduling of the writing tasks, and that they would use the same or similar methods to integrate the assignments into established curriculum.

To offset some of these challenges, we met with the individual instructors and gained their full cooperation in teaching the assignments and made sure they understood how the writing assignments were conceived; nevertheless, teaching methods differ from one instructor to another.

Our greatest challenge, however, was technical rather than instructional. The placement of the survey link into the courses' Blackboard sites affected whether or not students would be able to access the survey. As a result, one control group was lost due problems with the link to the exit survey in Blackboard.

Conclusion

Despite the loss of one control group at the end of the course, we do not believe the survey results were significantly impacted. The results show that students are indeed aware of the importance of written communication in their everyday lives and future careers. Though their attitudes may not have been extensively impacted by career-specific writing assignments, we believe these assignments are most valuable when provided in context and hope to continue this practice in CIS 110 and other technical courses.

Future Recommendations

Although our results do not show that the career-specific writing assignments positively affected students' attitudes toward writing, we were surprised to find that their awareness was already very high. The next step would be to explore why there is a difference between students' perceived importance in writing skills and the quality of their writing. Since anecdotal evidence indicates that students believe that "writing is for English classes," the solution may be in developing more relevant career-specific assignments that allow students to experience the relevance to their chosen careers. It may also be that instructors of career-specific courses need to teach students that practice within the career courses is a vital link to enhanced performance in the work place.

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Teaching Implications of the Writing CLIP

Janice Kerber

The ability to communicate is important to me, both by inclination and by timing. By inclination, I am a child of the 70's. The first time that I entered college was 1970, back in the day when we went to school to become educated people and have a richer and fuller life rather than to learn a career and make money. By timing, in that when I finally graduated in 2001 and came to teach at Durham Tech in 2002, Durham Tech was in the process of putting finishing touches on the Vision Statement. While mastering content area is important in a person's occupation, the Vision Statement addresses those harder to assess skills that are not only important in a person's occupation, but also important in a person's life.

The Vision Statement stresses among other things the importance of the ability to communicate both orally and in writing. From the beginning of my teaching career, I have attempted to promote communication skills. However, my first attempts in assigning both oral presentations and written papers were miserable failures. While I knew exactly what I expected, my students clearly did not. Or maybe I did not know exactly what I expected because when I tried to put my expectations into words, I found that I could not. So the first order of business was to clarify my expectations and then to find a way to clearly communicate my expectations to my students. As an accounting instructor, I am at heart a practitioner and needed help with this, so I enlisted several English and humanities instructors who I knew from various workshops. They were unendingly generous with their time and resources, and with their help I distilled my expectations into a "workable" rubric for both written and oral communication. They also provided a host of resources, both printed and web-based, that I passed on to my students. I know that my rubric and handout material is "workable" because most student submissions meet my expectations.

But I am still bothered by my students' attitudes toward presentations and writing assignments. My students invariable groan at the prospect of a written report. Their response is always, "That's what we do in

English." And they are less than convinced when I try to stress that they will be writing once they graduate and work in accounting. So when the opportunity to research career-specific communication assignments in a CLIP presented itself, I saw it as a chance to explore my uneasiness with my current approach.

Career-specific communication was exactly what I was looking for. Research, on the other hand, was not what I was looking for and left me on the verge of backing out of the group. As an accounting instructor, I am a practitioner, not researcher. But with the other group members' help, I took a deep breath and tried to fake my way through that part of the project. After we distilled out three research questions into one manageable question, "How does the integration of career-specific writing assignment(s) impact students' understanding of the importance of written communication?," it was time for a literature review. A literature review involves searching for related articles to see what other researchers have to say about the topic. Mostly what they have to say is long, boring, and seems to not be based on very good evidence.

Still within those long and boring articles, I found some very interesting tidbits. It turns out that many business professors are attempting to increase students' interaction with the written word. No surprise. And it also seems that many of those professors start by assigning written reports. And their students, like mine, chafe at those reports. The surprise, however, came when one author took the next step and challenged the notion of written reports. How many students, accounting or otherwise, will be asked to write a "report" in the same sense that reports are assigned in college? While I believe that practicing any form of writing will improve a person's ability to write other types of writing, it is not surprising that my accounting students groan when asked to write the traditional "report." Accountants research tax positions and write letters or orally present those positions and the implications to clients; they document their understanding of a client's internal control over financial reporting for an audit; or they research generally accepted accounting principles and summarize those principles for company policy manuals. As interesting as it may be, researching what went wrong at Enron or

WorldCom or AIG or General Motors is not what my students will do when they leave Durham Tech. Another interesting tidbit from our literature review is the general conclusion that several smaller writing assignments are more beneficial than one large assignment.

After the literature review, we developed a survey designed to gauge students' attitudes about the importance of writing in their personal lives and in their future careers. Students took this survey at the beginning of the semester. We chose two CIS 110 classes and the two lab sections for each of the CIS 110 classes for our research. For each of the CIS 110 classes, one lab section served as the control group, and one lab section served as the test group. We wrote six assignments that we believe were career-specific. After the six assignments, students were surveyed at the end of the semester to determine if their attitudes about the importance of writing had changed. The results were inconclusive, but what I learned from being a member of the CLIP was definitely not inconsequential. I have a new direction as I attempt to provide my students with what they need from their education both academically and personally at Durham Tech.

As a result of my participation in the CLIP, this semester I gave my students options: either research a company or accounting issue and present the research orally or create some other meaningful assignment using some form of communication. My students chose the latter. They chose to do a series of several small assignments, rather than one large assignment. They decided to use the Discussion Board in Blackboard because much of today's communication is electronic. We discussed what would be appropriate responses since Discussion Board communications often devolve into a posting followed by a series of "I agree." I would choose the topics and stipulated that students would have to do at least some research into the topics before responding. I explained that while I valued their opinions, I valued educated opinions even more. Each student was required to post an original response and respond to at least one other student's response.

The first Discussion Board topic that I chose was Durham Tech's 2002 Vision Statement. My students were already familiar with the statement

from prior classes that they had taken with me. We discussed what kind of research might be appropriate. Student-generated possibilities included comparing our Vision Statement to that of other schools or to corporate vision statements.

The second Discussion Board topic was to respond to two pieces of research about working in teams: "Teaching Teams about Teamwork: Preparation, Practice, and Performance Review" and "Using Critical Praxis to Understand and Teach Teamwork" (see References for full citations). In class, I require students to work on case studies together in groups. Each group decides how best to present the case information. I then ask a group to present its case analysis while the rest of the class critiques the presenting group's analysis. My goal is to give students practice in the process of working together, learning how to state their opinions, sifting through all the ideas, encouraging each other and keeping each other focused, and compromising. Accounting students are particularly reluctant to work in groups because they often believe that they can do a better job doing the work themselves. I give individual students my observations about how they worked within their group. I chose this assignment because one of my students had previously challenged me about my observations. Her position was that the crucial part of working as a group was the final product; the product had to be the best possible product. I am more interested in how the group works together, how the group functions; spreading of classroom knowledge is more important than the product.

For the third Discussion Board topic, I asked students to research the change from U.S. generally accepted accounting principles to international financial reporting standards and the implications that the change would have on the work that they would be doing upon graduation. Students not only researched specific changes, but they brought incredible insight into the consequences the changing standards would have on them. Several students were fearful of the changes, and other students responded sensitively to those fears.

The fourth Discussion Board topic asked students to respond to two articles from the *Journal of Accountancy* that address the effect of the

recent change in fair value accounting on the economic crisis. One article is pro fair value accounting, and the other is con. While the subject of fair value accounting is complex, and I did not expect my students to fully understand the implications of fair value accounting, these articles introduced the idea that how accounting issues are recorded and reported have an effect not only on individual businesses, but also on the economy as a whole.

We also discussed how the project would be graded. It was decided that I would award half of the grade, and they would award the other half of the grade (the project was worth 10% of their final grade). Students seemed comfortable accepting that I was looking for creative and insightful responses as well as solid information. I also pointed out that I could identify a creative and insightful response by the quality of the interchange that followed a posting. I was amazed at their insights, the research that they brought to the discussions, and the way in which they affirmed and challenged each other. While each student was responsible for an original post and for responding to at least one other student, students typically responded to more than one other classmate, and there were frequent occasions when the "discussion" went back and forth several times as students further refined their thinking. For the students' portion of the grade, I simply asked them what they believed their grade should be and to defend their assessment. Students were surprisingly honest and forthright in their assessment.

While this was a crude attempt to incorporate writing in a more meaningful way, and I will continue to refine, or redefine, writing, my students responded more favorable to this assignment than they do to the standard MLA research report. Based on my experience in the classroom and with the course content, I expect that students who willingly participate at a level greater than expected on a series of education or accounting issues are learning more than students who grudgingly write a research paper.

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Professional Development through CLIP

Robbi Muckenfuss

As an educator, the list of professional responsibilities is lengthy and exhaustive at times. This, however, is not reason to look for easy ways to teach; justification for replicating notes, activities, and materials semester after semester; or rationale for settling into a teaching pattern that produces nothing more than bleary-eyed students.

The end of one semester and the beginning of another have always been a time of resolutions for me: "I resolve that this semester I will not get behind in my grading" or "I resolve that this semester I will find a way to teach paragraph main ideas that will not bore students to tears." Part of the process of trying to determine a better way to do something is to investigate or research new ideas. I had been interested in doing formal research for several semesters, and when I learned about the existence of Communities of Learning, Inquiry, and Practice (CLIP), I knew immediately I had found a way to complete a resolution.

I joined several colleagues in a CLIP group and the work soon began. Fortunately for our group, our leader Theresa Fine-Pawsey had been contemplating a research topic for some time. We took the ideas of career-specific writing and student attitudes about writing and moved forward into the research process.

I had fairly simple personal expectations about the research from the beginning. First, I wanted to gain some experience in performing academic research. Between graduate school and job-related reading, I have spent plenty of time reading research-based articles. I have pictured writers interviewing subjects or observing students, or analyzing data, so I knew I understood what needed to happen, but I wanted to do more than just read a report of someone else's findings. Second, I wanted to gain something from the research that would impact my teaching. I did not want to participate in a project just so it could be one more thing I have done.

The CLIP philosophy focuses on teaching, learning, and student success, and the process is specifically designed for faculty. While many teaching faculty might love the chance to do research, there is not always enough time, money, facilities, or other necessary support. CLIP research uses collaboration with colleagues to address some of these issues. This was another thing about participating in a CLIP that excited me. It is so easy to settle into your schedule for the semester and go to a few meetings without ever breaking through the department shell. I can tell when I am doing this because I end up looking across the room at larger college functions and saying, "Who is that person? I have never seen him before." I needed to break through my shell a little bit more, and I did with CLIP. I worked closely with two University Transfer colleagues, one Business and Public Service Technologies colleague, and one Information Systems Technology colleague. I am doubtful that I would have ever gotten to know these individuals or worked with them as closely if it had not been for our CLIP.

The diversity of my CLIP group and topic of our research provided me another way of breaking through my departmental shell. I am part of Developmental Education under the Student Engagement and Transitions Department. As part of this team, I specifically spend my time teaching developmental reading students and advising students experiencing reading difficulties. Sometimes I have to remind myself that there are things going on around me at DTCC that involve more than reading.

One of the first actions my CLIP group had to take was find study subjects. We wanted to work with students taking a career or technical program class. Tom Murphy suggested using students enrolled in the CIS 110 class. This class touches students in many programs, teaches career skills, and uses writing assignments. Once it was determined that this group would be our study subjects, I realized I needed to know more about the class. As part of the research and also for personal edification, I examined the class texts and learned about the course learning outcomes. This reminded me of the importance of teaching my students how to read from a variety of texts, how to learn course-specific vocabu-

lary, and how to study content-specific materials. This is yet another opportunity I would not have received without being part of a CLIP.

One of the most interesting results I noted from the CLIP research was the "how students see the world" piece. Our CLIP survey asked students to respond to "I know what effective communication is." The majority of students responded that they either agreed or strongly agreed that they did in fact know what "effective communication is." At first glance, this would be something to celebrate about Durham Tech students and move on to something else. The more I thought about this, the more I wasn't as sure if instant celebration was called for yet. Yes, we have many outstanding students at Durham Tech who could discuss and demonstrate "effective communication" without any problem. My worries are with the students who aren't quite the "effective communicators" yet, but will still answer the question with "I know what it is."

I do see the disconnect between a student view of the world and the academic realities. I do see the students who truly believe their current skill base is satisfactory for any and all academic programs and career paths. One of the hardest parts of my job is helping students see that there are a number of things that have to be learned and a number of steps that have to be taken before they can just walk into the program or career of their choice. I do not have a solution, answer, or remedy for this, and I really wish that I did.

I am thankful and pleased with my CLIP experience. I am also hopeful that the Durham Tech community will continue to offer and support these types of projects among the faculty. I would welcome the chance to join another CLIP group in the future to explore a new and different topic. I have learned that like many other things in life, research topics need time, patience, and people dedicated enough to see the project through to the end.

Contributors

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Janice Kerber graduated from Durham Tech with an AAS in Accounting in 1999, from Meredith College with a Bachelor's degree in Accounting in 2000, and from North Carolina State University with a Master's degree in Accounting in 2001. She began her teaching career by teaching part-time at Meredith in Fall 2001, and she became a full-time instructor at Durham Tech in Spring 2003. She worked as an accounting tutor at Durham Tech while she was a student, and tutoring sparked her desire to teach.

Janel Mays has been an English Instructor at Durham Tech for six years. She earned a Master of Arts degree in English and African American literature from Pennsylvania State University.

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Robbi Muckenfuss began teaching at Durham Tech as an adjunct in Fall 2001 and then became part of the full-time faculty in Fall 2004. She teaches Developmental Reading where she enjoys focusing her efforts on students with learning disabilities and non-native speakers. In her time away from work, you will find her playing Wii with her three children and husband.

Tom Murphy is Program Director/Instructor for Computer Programming and Applications, is in his tenth year at Durham Tech, and holds a Bachelor's degree in Computer Science. He is a member of the Association for Computing Machinery (ACM), the North Carolina Computer Instructor Association (NCCIA), and a past president of Durham Tech's Faculty Council.

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